

ABSTRACT

The present invention provides a rotor for a rotary electric machine that suppresses the occurrence of winding disturbances in the process of winding a coil wire and has a coil field having a uniform outside diameter that is less likely to collapse.

A coil field of a rotor coil is constructed by winding a coil wire having a circular cross section onto an outer circumference of a drum portion of a bobbin in multiple layers so as to make columns in each of the layers equal in number in an axial direction. Odd numbered layers of the coil field are constructed such that the coil wire is wound for approximately one turn around the drum portion in contact with an inner peripheral wall surface of a first flange portion of the bobbin, then wound into a plurality of columns in an axial direction such that the columns of the coil wire contact each other, and the coil wire in a final column forms a gap S relative to an inner peripheral wall surface of a second flange portion of the bobbin, and even numbered layers of the coil field are constructed such that the coil wire is wound for approximately one turn around the drum portion in contact with an inner peripheral wall surface of the second flange portion, then wound into a plurality of columns in an axial direction such that the columns of the coil wire contact each other, and the coil wire in a final column forms a gap S relative to an inner peripheral wall surface of the first flange portion. The gap S satisfies an expression $D/4 \leq S \leq D/2$ relative to a diameter D of the coil wire.

Thus, because the occurrence of winding disturbances in the process of winding the coil wire is suppressed, the coil wire can be wound into an aligned state, enabling a coil field that is less likely to collapse to be achieved, and the outside diameter of the coil field is made uniform, also preventing damage to an electrically-insulating coating resulting from contact with claw-shaped magnetic poles.

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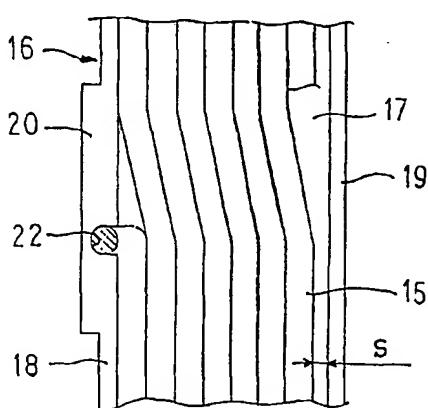
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(57) Abstract: A rotor for a dynamo-electric machine in which an odd stage is arranged such that coil wires are turned in a plurality of rows in the axial direction to touch each other after turning substantially once around the winding body section while touching the inner circumferential wall face at the first flange section (18) of a bobbin and a coil wire in the last row has a gap S with respect to the inner circumferential wall face at the second flange section (19) of the bobbin, whereas an even stage is arranged such that the first row touches the inner circumferential wall face at the second flange section and the last row has a gap S with respect to the inner circumferential wall face at the first flange section when a coil wire having a circular cross-section is wound in multistage around the outer circumference of the winding body section of the bobbin while equalizing the number of rows of respective stages in the axial direction. The gap S and the diameter D of the coil wire satisfy a relation $D/4 \leq S \leq D/2$.

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